Complete Summary

GUIDELINE TITLE

Selection of an oxygen delivery device for neonatal and pediatric patients: 2002 revision and update.

BIBLIOGRAPHIC SOURCE(S)

Myers TR. AARC Clinical Practice Guideline: selection of an oxygen delivery device for neonatal and pediatric patients--2002 revision & update. Respir Care 2002 Jun;47(6):707-16. [97 references] PubMed

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Hypoxemia

GUIDELINE CATEGORY

Evaluation
Management
Treatment

CLINICAL SPECIALTY

Anesthesiology
Critical Care
Emergency Medicine
Family Practice
Pediatrics
Pulmonary Medicine

INTENDED USERS

Respiratory Care Practitioners

GUIDELINE OBJECTIVE(S)

To provide clinical practice guidelines on the selection of an oxygen delivery system for neonatal and pediatric patients

TARGET POPULATION

Neonatal and pediatric patients requiring administration of supplemental oxygen, including patients with and without artificial airways

INTERVENTIONS AND PRACTICES CONSIDERED

Oxygen delivery systems for neonatal and pediatric patients, including low-flow, reservoir, high-flow and enclosure systems

MAJOR OUTCOMES CONSIDERED

- Effect of the oxygen delivery device on oxygen saturation
- Appropriateness of the oxygen delivery device for the patient
- Patient monitoring
- Patient care

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not stated

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Description:

The administration of supplemental oxygen to neonatal and pediatric patients requires the selection of an oxygen delivery system that suits the patient's size, needs, and the therapeutic goals. Oxygen delivery systems are categorized as either low-flow (variable performance) or high-flow (fixed performance) systems. Low-flow systems provide a fractional concentration of delivered oxygen (F_{DO2}) that varies with the patient's inspiratory flow and are classified as variable-performance oxygen delivery systems. High-flow systems can provide a specific F_{DO2} at flows that meet or exceed the patient's inspiratory flowrequirement and are classified as fixed-performance oxygen delivery systems.

- Low-flow systems:
    1. Nasal cannulae consist of two soft prongs that arise from oxygen supply tubing. The prongs are inserted into the patient's anterior nares, and the tubing is secured to the patient's face. Oxygen flows from the cannula into the patient's nasopharynx, which acts as an

anatomic reservoir. The fractional concentration of inspired oxygen (F_{IO2}) varies with the patient's inspiratory flow.

2. Nasopharyngeal catheters are soft tubes with several distal holes. The catheter should be inserted into the patient's nose to a depth equal to the distance from the ala nasi to the tragus or be gently advanced and then withdrawn until it rests slightly above the uvula. The tube, secured to the patient's face, is connected to oxygen supply tubing. Oxygen flows from the catheter into the patient's oropharynx, which acts as an anatomic reservoir. The F_{IO2} varies with the patient's inspiratory flow.
3. Tracheostomy oxygen adapters are devices that attach either directly to a tracheostomy tube or to a heat-moisture exchanger (HME), which is then attached to the tube. (Heat moisture exchangers or artificial noses collect a patient's expired heat and moisture and returns it during the following inspiration.) The oxygen supply tube connected to the adapter provides a blow-by source of oxygen that results in a variable F_{IO2}. These devices are intended for short periods such as brief transports or to increase patient mobility.
4. Transtracheal catheters are devices that deliver gas directly into the trachea via a small percutaneous catheter held in place with a bead chain necklace.

- Reservoir systems:
    1. Simple oxygen masks are plastic reservoirs designed to fit over the patient's nose and mouth and be secured around the patient's head by an elastic strap. An increased reservoir effect is produced by adding the volume of the mask. Oxygen is delivered through a small-bore tube connected to the base of the mask. Holes on each side of the mask provide an egress for exhaled gases and serve as room-air entrainment ports. The F_{IO2} varies with the patient's inspiratory flow, mask fit, and patient respiratory pattern.
    2. Partial-rebreathing masks are similar to simple oxygen masks but contain a reservoir at the base of the mask. The reservoir receives fresh gas plus exhaled gas approximately equal to the volume of the patient's anatomic dead space. The oxygen concentration of the exhaled gases combined with the supply of fresh oxygen, permits the use of flows lower than those necessary for other devices (e.g., non-rebreathing masks), and potentially conserves oxygen use.
    3. Non-rebreathing masks are similar to partial-rebreathing masks but do not permit the mixing of exhaled gases with the fresh gas supply. A series of one-way valves ensures a fresh oxygen supply with minimal dilution from the entrainment of room air. The one-way valve over the reservoir bag prevents entry of expired gas, and the one-way valve over one of the side ports limits entrainment of room air. This design provides a higher F_{IO2} than the simple and partial-rebreathing masks and the nasal devices provided the mask fits correctly.
- High-flow systems:
    1. An air-entrainment mask contains a jet orifice and air entrainment ports and is designed to fit over the patient's nose and mouth and is connected to oxygen supply tubing. Oxygen under pressure is forced through a small jet orifice entering the mask. The velocity increases causing a shearing effect distal to the jet orifice, which causes room air to be entrained into the mask. The total flow provided by the mask is determined by the cross-sectional area of the entrainment ports, the

diameter of the jet orifice, and the oxygen flow to the jet. The F_{DO2} is determined by the dimensions of the jet and the entrainment ports. The entrainment mechanism is based on the principles described by Bernoulli. A collar can be attached to the base of the corrugated hose for supplemental humidification, and the device can be adapted to a tracheostomy collar.

2. Air-entrainment nebulizers are gas-powered, large-volume nebulizers that contain an adjustable air-entrainment port, which determines specific oxygen concentrations. In addition to providing particulate water with or without added medication, heated nebulizers can deliver gas saturated with water vapor at body temperature. A corrugated hose serves as a conduit from the nebulizer to an aerosol mask, face tent, tracheostomy collar, or T-piece.

- Enclosure systems:
    1. Oxygen hoods are transparent enclosures designed to surround the head of the neonate or small infant. A continuous flow of humidified oxygen is supplied to the hood. Transparent enclosures in larger sizes (so-called tent houses or huts) are available for patients who are too big for neonatal-size hoods.
    2. Closed incubators are transparent enclosures that provide a warm environment for small infants with temperature instability. Supplemental oxygen can be added to incubators but may result in an increased oxygen concentration. The primary purpose of an incubator is to provide a temperature-controlled environment. Humidification is available through a baffled blow-over water reservoir; however, due to the high risk of infection associated with this humidification system, alternative sources are used. Therefore, the incubator is not further discussed as an oxygen delivery device.

Setting:

Oxygen delivery devices are used in a number of settings including hospitals, clinics, extended care facilities, the home, and patient transport vehicles.

Indications:

The selection of an oxygen delivery device is indicated with:

- Documented hypoxemia
- An acute situation in which hypoxemia is suspected or in which suspected regional hypoxia may respond to an increase in arterial oxygen tension (P_{aO2}). Substantiation of P_{aO2} is required within an appropriate period of time following initiation of therapy.

Limitations:

- Nasal cannulas:
    1. Changes in minute ventilation and inspiratory flow affect air entrainment and result in fluctuations in F_{IO2}.
    2. Prongs are difficult to keep in position, particularly with small infants.
    3. The effect of mouth versus nose breathing on F_{IO2} remains controversial.

4. Use may be limited by the presence of excessive mucus drainage, mucosal edema, or a deviated septum.
5. Maximum flow should be limited to 2 L/min in infants and newborns.
6. Care should be taken to keep the cannula tubing and straps away from the neck to prevent airway obstruction in infants.
7. Discrepancies between set and delivered flow can occur in the same flowmeter at different settings and among different flowmeters.
8. Discrepancies in flow and oxygen concentration between set and delivered values can occur in low-flow blenders at flows below the recommended range of the blender.

- Nasopharyngeal catheters:
  1. Method is in less common use because of the complexity of care.
  2. F_{IO2} is difficult to control and measure.
  3. Effect of mouth versus nose breathing on F_{IO2} remains controversial.
  4. Use may be limited by excessive mucus drainage, mucosal edema, or the presence of a deviated septum.
  5. Catheter should be cleared frequently to prevent occlusion of the distal holes. The patient should be observed for evidence of catheter occlusion, and the catheter should be alternated between nares every 8 to 12 hours and changed daily.
  6. Catheter sizes less than 8 Fr are less effective in oxygen delivery.
  7. Lower oxygen concentrations are delivered if the catheter is placed in the nose rather than in the pharynx.
  8. Low-flow flowmeters (<3 L/min) should be used.
  9. Discrepancies between set and delivered flow can occur in the same flowmeter at different settings and among different flowmeters.
  10. Discrepancies in flow and oxygen concentration between set and delivered values canoccur in low-flow blenders at flows below those recommended by the manufacturer.
- Transtracheal catheters:
  1. Method is in less common use because of the complexity of care.
  2. Require frequent medical monitoring
  3. Replacement catheters are costly.
  4. Increased time is needed for candidate evaluation and teaching.
- Masks:
  1. Provide variable F_{IO2} depending on inspiratory flow and construction of the mask's reservoir and are not recommended when precise concentrations are required
  2. Are confining and may not be well tolerated
  3. Interfere with feeding
  4. May not be available in sizes appropriate for all patients
  5. Require a minimum flow per manufacturer's instructions to avoid possible rebreathing of carbon dioxide (CO_2).
  6. The maximum F_{IO2} attainable with a simple, non-rebreathing or partial-rebreathing mask in neonates, infants, and children has not been well documented.
  7. The performance of air-entrainment masks may be altered by resistance to flow distal to the restricted orifice (resulting in higher F_{DO2} and lower total flow delivered). The total flow from air-entrainment masks at settings >0.40 may not equal or exceed the patient's inspiratory flow.
  8. Performance is altered if the entrainment ports are blocked.
- Air-entrainment nebulizers:

1. Are vulnerable to alterations described above.
2. Should have temperature monitored if they are heated (cool mist is not recommended for newborns because of the potential for cold stress). In newborns, the temperature of the gas-aerosol mixture at the patient should be approximately equal to the desired environmental temperature.
3. May have performance altered by resistance to flow distal to the restricted orifice (resulting in higher F_{DO2} and lower total flow delivered). The total flow from air-entrainment nebulizers at settings >0.40 may fail to equal or exceed the patient's inspiratory flow. However, increasing the oxygen flow to the inlet of the nebulizer may produce a higher delivered total flow.

- Hoods:
    1. Oxygen concentrations may vary within the hood. Oxygen concentrations should be measured as near the nose and mouth as possible. Opening any enclosure decreases the oxygen concentration. For infants and children confined to hoods, nasal oxygen may need to be supplied during feeding and nursing care. Flows >7 L/min are required to wash out carbon dioxide.
    2. Devices can be confining and isolating.
    3. Concentration in a hood can vary from 0.21 to 1.0.
    4. Temperature of the gases in the hood should be maintained to provide a neutral thermal environment.
    5. High gas flows may produce harmful noise levels.
- Tracheostomy oxygen adapters provide variable F_{IO2}s. Heat-moisture exchangers should have minimum dead-space volume especially when used with neonates. Resistance within a heat-moisture exchanger can increase when water is absorbed by the hygroscopic inserts or when secretions are coughed into the device.

Assessment of Need:

Need is determined by measurement of inadequate oxygen tensions and saturations by invasive or noninvasive methods and/or the presence of clinical indicators. Supplemental oxygen flow should be titrated to maintain adequate oxygen saturation as indicated by pulse oximetry S_{pO2} or appropriate arterial or venous blood gas values.

- Nasal cannulae, nasopharyngeal catheters, and transtracheal catheters are used when the need exists to:
    1. Provide low-level supplemental oxygen to the infant or child
    2. Feed the infant without interrupting oxygen delivery
    3. Increase mobility
- Simple oxygen masks are used to provide supplemental oxygen in the moderate range (0.35 to 0.50, depending on size and minute ventilation) for short periods of time (e.g., during procedures, for transport, in emergency situations).
- Partial rebreathing masks are used to conserve the oxygen supply when higher concentrations (F_{IO2} >0.4, <0.6) are warranted (e.g., during transport).
- Non-rebreathing masks are used to deliver concentrations $\geq$0.60 or specific concentrations (as from a blender).

- Air-entrainment masks provide a flow of gas of predetermined precise oxygen concentration (24% to 40%) that exceeds the patient's inspiratory flow. At the 50% setting, the total flow from the device may not meet the inspiratory flow.
- Air-entrainment nebulizers, although not recommended, can be used when high levels of humidity or aerosol are desired (as with a bypassed upper airway). The patient application device can be a tracheostomy collar, face tent, aerosol mask, or blow-by arrangement.
- Hoods are used to provide:
    1. Controlled F_{IO2} in infants and small children
    2. Controlled F_{IO2} and/or increased heated humidity to patients who cannot tolerate other devices
    3. Controlled F_{IO2} when the chest, abdomen, and extremities must be accessible to caregivers
    4. Oxygen concentrations necessary for oxygen challenge (hyperoxia) tests in the spontaneously breathing neonate
- Tracheostomy oxygen adapters, which may or may not be coupled with heat-moisture exchangers, are used to deliver oxygen to a tracheostomy.

Assessment of Outcome:

Outcome is assessed by determining whether the device selected produces an appropriate increase in oxygen saturation, prove to be appropriate for the patient, allow adequate patient monitoring, and facilitates patient care.

Resources:

- Equipment
    1. Oxygen source:
        a. Cylinder: Must meet Department of Transportation (DOT) standards, Compressed Gas Association (CGA) standards, and National Fire Protection Association (NFPA) recommendations, and appropriate regulator and wrenches must be supplied
        b. Concentrators (or enrichers)
        c. Bulk supplies should meet National Fire Protection Association standards
    2. Delivery accessory equipment:
        a. Oxygen tubing
        b. Corrugated aerosol tubing and water trap
    3. Humidifiers: No subjective or objective evidence supports routine humidification of oxygen at flows $\leq$4 L/min. However, it is not known whether the use of a bubble humidifier with a nasal cannula in the neonate has benefit, and the use of a bubble humidifier can verify oxygen delivery at flows <1 L/min. Heat-moisture exchangers with low dead space are appropriate for short-term use in patients with artificial airways.
    4. Blenders: Although blenders have been used in weaning neonates with a nasal cannula from oxygen, it appears that using a very-low flowmeter (0 mL to 200 mL) may be more reliable.
    5. Compensated, low-range flowmeters adjustable in increments <0.125 L/min.

6. Oxygen analyzers: There are four principle types of oxygen analyzers; polargraphic, galvanic cell, paramagnetic, and wheatstone bridge. The polargraphic and galvanic cell are the most commonly used and operate on an electrochemical principle.
7. Noninvasive oxygen monitors: Transcutaneous (TcO_2) monitor or pulse oximeter.
8. Nebulizer solutions: Sterile water or sterile normal saline solution.

- Personnel:
  1. Health care providers responsible for delivery of oxygen should have demonstrated and documented knowledge and skills related to:
     a. Oxygen delivery systems and their limitations
     b. Assembly, care, and use of oxygen delivery systems
     c. Performance of the necessary subjective and objective assessments in order to determine effectiveness of oxygen therapy
     d. Clinical assessment skills to recommend changes in oxygen therapy
     e. Provision of comprehensive patient and lay caregiver instruction
  2. When supplemental oxygen is to be used out of the hospital setting, the patient and/or family member or lay caregiver should:
     a. Demonstrate proper use and understanding of the oxygen delivery device
     b. Demonstrate proper assembly, care, and cleaning of the oxygen delivery device
     c. Demonstrate an understanding of how, when, and what to report to a physician or surrogate

Monitoring:

- Patient:
  1. Clinical assessment including but not limited to cardiac, pulmonary, and neurologic status and apparent work of breathing.
  2. Assessment of physiologic variables: noninvasive or invasive measurement of oxygen tensions or saturation in any patient treated with oxygen; within 1 hour of initiation for the neonate.
- Equipment:
  1. All oxygen delivery systems should be checked at least once each day. More frequent checks by calibrated analyzer are necessary in systems:
     a. Susceptible to variation in oxygen concentration
     b. Applied to patients with artificial airways
     c. Continuous analysis is recommended in hoods
     d. Oxygen should be analyzed as close as possible to the infant's face
  2. All heated delivery systems should be continuously monitored for temperature.

Frequency:

- Selection of a device is made at the initiation of therapy, after careful assessment of need and patient characteristics.
- The change from one type of device to another is based on a change in the patient's condition, patient preference, or ability to use a specific device.

(Oxygen therapy should be administered continuously unless the need has been shown to be associated only with specific situations e.g., exercise, feeding, or other stress.)

Infection Control:

- Universal precautions and measures to limit the transmission of tuberculosis must be adhered to at all times.
- Low-flow systems
    1. Under normal circumstances, low-flow oxygen systems do not present clinically important risk of infection and do not require routine replacement on the same patient.
    2. Nasopharyngeal catheters should be changed every 24 hours.
    3. Transtracheal catheters should be changed every 3 months.
- Reservoir systems: Under normal circumstances, reservoir systems as defined for this guideline do not present clinically important risk of infection and do not require routine replacement on the same patient.
- High-flow systems
    1. Large-volume nebulizers should be changed every 24 hours when applied to patients with an artificial airway.
    2. In the absence of definitive studies to support change-out intervals on nonintubated patients, results of institution-specific and patient-specific surveillance measures should dictate the frequency with which such equipment is replaced.
- Enclosure systems: There is no recommendation regarding the frequency of changing oxygen hoods and reservoirs while in use on the same patient.
- Other devices: Between patients, subject equipment (e.g., probes, oxygen sensors) to high level disinfection.
- Nebulizer solutions: Use only sterile fluids and dispense them aseptically.

Note: It is the expert opinion of the Clinical Practice Guideline Steering Committee (2002) that some devices that are applicable to the pediatric population are not appropriate for the neonatal population.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Improved and appropriate increase in oxygen saturation

- Improved patient monitoring that facilitates patient care

POTENTIAL HARMS

- Physiologic:
    1. The etiology of retinopathy of prematurity, especially the role of oxygen, is controversial. Care should be taken when supplemental oxygen is provided to preterm infants (<37 weeks gestation). It is suggested that oxygen supplementation should not result in a arterial oxygen tension (P_{aO2}) >80 torr.
    2. The administration of supplemental oxygen to patients with certain congenital heart lesions (e.g., hypoplastic left-heart, single ventricle) may cause an increase in alveolar oxygen tension and compromise the balance between pulmonary and systemic blood flow.
    3. The administration of supplemental oxygen to patients suffering from paraquat poisoning or to patients receiving certain chemotherapeutic agents (e.g., bleomycin) may result in pulmonary complications (e.g., oxygen toxicity and pulmonary fibrosis).
    4. Stimulation of the superior laryngeal nerves may cause alterations in respiratory pattern if the gas flow from the oxygen source is cool and is directed at the face of the infant.
    5. Inappropriate selection of functional concentration of delivered oxygen (F_{DO2}) or oxygen flow may result in hypoxemia or hyperoxemia.
- Equipment-related:
    1. Nasal cannulae:
        a. Skin irritation can result from material used to secure the cannula or from local allergic reaction to polyvinyl chloride.
        b. Improper sizing can lead to nasal obstruction or irritation.
        c. Displacement can lead to loss of oxygen delivery.
        d. Inadvertent continuous positive airway pressure (CPAP) may be administered depending upon the size of the nasal cannula, the gas flow, and the infant's anatomy.
        e. Irritation can result if flows are excessive.
    2. Nasopharyngeal catheters:
        a. Improper insertion can cause gagging and nasal or pharyngeal trauma.
        b. Improper sizing can lead to nasal obstruction or irritation.
        c. Excessive flow can produce pain in the frontal sinuses.
        d. Pneumocephalus is a rare but possible complication.
        e. Excessive secretions and/or mucosal inflammation can result.
        f. Skin irritation may result from material used to secure the cannula and/or from local allergic reaction to polyvinyl chloride.
        g. Occlusion of distal openings may occur.
        h. Excessive flow may cause gastric distention.
    3. Transtracheal catheters:
        a. Increase risk of infection compared to nasal cannulae and catheters
        b. Increased risk of complications
    4. Masks:
        a. Aspiration of vomitus may be more likely when a mask is in place.
        b. Irritation may result from tight application.

c. Rebreathing of carbon dioxide may occur if total oxygen flow is inadequate.
d. It is the expert opinion of the Clinical Practice Guideline Steering Committee (2002) that partial rebreathers are not appropriate for the neonatal population.

5. Air-entrainment nebulizers:
    a. Produce high noise levels in enclosed environments (e.g., hoods, incubators) and may induce hearing impairment; when an air-entrainment nebulizer is used in an enclosed environment, the entrainment port should be set on 100% (i.e., closed) and the nebulizer powered either by a blender or by compressed air with titration of oxygen to the desired concentration.
    b. Are susceptible to contamination
    c. May cause bronchoreactivity in patients with reactive airways when used with nonisotonic solutions
    d. May create unwanted torque and increase the likelihood of inadvertent extubation or decannulation of the patient when used with a T-piece and applied directly to an endotracheal or tracheostomy tube
    e. May not provide particles of desired size range and in a predictable dose
    f. If unheated, may induce cold stress in neonates
    g. Condensate in tubing may result in advertent lavage when attached to the endotracheal tube.
6. Hoods and transparent enclosures:
    a. Prolonged exposure to humidified oxygen may increase risk for cutaneous fungal infection.
    b. Inadequate or loss of gas flow may result in hypoxia or hypercapnia.
    c. Temperature within enclosures should be closely monitored to reduce the potential for cold stress or apnea from overheating in neonates.
    d. Use of an improperly sized hood can result in irritation of the infant's skin.
7. Tracheostomy oxygen adapters: Adapters may create unwanted torque and increase the likelihood of inadvertent decannulation of the patient, and heat-moisture exchangers may increase work of breathing to an unacceptable level in patients <8 kg if dead space and resistance are high.

- During laser bronchoscopy, minimal levels of supplemental oxygen should be used to decrease the risk of intratracheal ignition.
- Fire hazard is increased in the presence of increased oxygen concentrations.
- Bacterial contamination has been associated with certain nebulization and humidification systems.

CONTRAINDICATIONS

CONTRAINDICATIONS

- No specific contraindications to delivering oxygen exist when indications are judged to be present.

- Nasal cannulas and nasopharyngeal catheters are contraindicated in patients with nasal obstruction (e.g., nasal polyps, choanal atresia, etc.).
- Nasopharyngeal catheters are contraindicated in the presence of maxillofacial trauma, in patients in whom a basal skull fracture is present or suspected, or coagulation problems exist.
    - It is the expert opinion of the Clinical Practice Guideline Steering Committee (2002) that nasopharyngeal catheters are not appropriate for oxygen administration in the neonatal population.
- Although opinions vary, infants intubated for airway protection should probably be placed on continuous positive airway pressure (CPAP) (i.e., physiologic continuous positive airway pressure) for supplemental oxygen rather than on a T-piece because of the loss of physiologic end-expiratory pressure created by an open glottis.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Safety

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Myers TR. AARC Clinical Practice Guideline: selection of an oxygen delivery device for neonatal and pediatric patients--2002 revision & update. Respir Care 2002 Jun;47(6):707-16. [97 references] PubMed

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1996 Jul (revised 2002 Jun)

GUIDELINE DEVELOPER(S)

American Association for Respiratory Care - Professional Association

SOURCE(S) OF FUNDING

American Association for Respiratory Care (AARC)

GUIDELINE COMMITTEE

2002 Clinical Practice Guideline Steering Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Revised by Timothy R. Myers RRT

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This updates a previously released version (Respir Care 1996 Jul;47[7]:637-46).

GUIDELINE AVAILABILITY

Electronic copies: Available from the American Association for Respiratory Care (AARC) Web site.

Print copies: Available from American Association for Respiratory Care, 11030 Ables Lane, Dallas, TX 75229.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- The AARC Clinical Practice Guidelines. Respir Care 1996;41(7):647-53.

Print copies: Available from the American Association for Respiratory Care (AARC), CPG Desk, 11030 Ables Ln, Dallas, TX 75229-4593; Web site: www.aarc.org.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on November 30, 1998. The information was verified by the guideline developer on December 15, 1998. This summary was updated by ECRI on May 29, 2002. The updated information was verified by the guideline developer on July 23, 2002.

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